

METONIDZE, T. A.

METONIDZE, T. A., Inzhener i PEREDERIN, I. A., Kand. Tekhn. Nauk
Nauchno-issledovatel'skiy institut po stroitel'stvu Ministerstva reftyanoy
promyshlennosti.

RAZABOTKA RETSEPTURY MEISKRYASHCHIKI, BENZOSTOYKIKH POLOV DLYA KEMTERERER-
ABATYVATUSHCHIKH ZAVODOV

page 111

SO: Collection of Annotations of Scientific Research Work on Construction,
completed in 1980,
Moscow, 1981

S/078/63/008/004/010/013
A059/A126

AUTHORS: Rozen, A.M., Reznik, A.M., Korovin, S.S., Metonidze, Z.A.

TITLE: The extraction of nitric acid from a mixture with hydrochloric acid with n-tributyl phosphate

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 4, 1963, 1,003 - 1,010

TEXT: The results of studies performed on the joint extraction of HNO_3 and HCl by a 50% solution of tributyl phosphate (TBP) in o-xylene at HNO_3 concentrations between 0.25 and 4.0 moles/liter and HCl concentrations between 0.5 and 2.5 - 6 moles/liter are given. The fact that HCl in the presence of HNO_3 is not extracted throughout the whole concentration range studied is ascribed to the fact that the extraction constant of HNO_3 ($K \sim 0.2$) is by two orders in excess of that of HCl ($K \sim 10^{-3}$) so that HNO_3 expels HCl from the organic phase. Extraction of HNO_3 is considerably increased by the addition of HCl which means that HCl acts as a salting-out agent in this case. This is shown to be due to the increase in the activity coefficients of HNO_3 in the aqueous phase when HCl is present. The activity coefficient, $\gamma_{\pm}^{\text{HNO}_3}$, of HNO_3 in the presence of HCl

Card 1/3

S/078/63/008/004/010/013
A059/A126

The extraction of nitric acid from a

is calculated from the equation:

$$\gamma_{\pm}^{\text{HNO}_3} = \sqrt{\frac{\bar{K}}{K}} \quad (4)$$

where $\bar{K}$ is the apparent and K the effective extraction constant. It is found that the Harden equation:

$$[\log \gamma_{\pm}(x, m) - \log \gamma_{\pm}(x, 0)]_{j=\text{const}} = -\delta_s J_s \quad (5)$$

is satisfied, where $\gamma_{\pm}(x, m)$ is the activity coefficient in the presence of m moles of the salting-out agent, $\gamma_{\pm}(x, 0)$ the activity coefficient in the absence of the salting-out agent, but at the same total ionic strength of the solution, m is the concentration and J_s the ionic strength of the salting-out agent, and δ_s is the Harden coefficient depending on the characteristics of the salting-out agent. The mean value of the Harden coefficient was found to be $\delta_{\text{HCl}} = -0.028 \pm 0.001$. The equation of A.M. Rozen [Atomnaya energiya, v. 2, 445 (1957)]:

Card 2/3

The extraction of nitric acid from a

S/078/63/008/004/010/013
A059/A126

$$\log \gamma_{\pm}(x, m) - \log \gamma_{\pm}(x, 0) = (\delta^* - \delta_g) J_g, \quad (7)$$

where δ^* is a constant value is found to hold. The increase in the activity coefficients of HNO_3 in the presence of HCl is explained by the stronger hydration degree of the latter ($n_{\text{HCl}} = 8$, while $n_{\text{HNO}_3} = 5$). The calculated activity coefficients of HNO_3 in the presence of HCl were found to agree satisfactorily with the respective experimental results. There are 9 figures and 2 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. Lomonosova, Kafedra khimii i tekhnologii redkikh i rasseyannykh elementov (Moscow Institute of Fine Chemical Technology imeni Lomonosov, Department of Chemistry and Technology of Rare and Trace Elements)

SUBMITTED: July 4, 1962

Card 3/3

METRAK, Czeslaw, mhr., inz.

Outline of the development of chest furniture construction.
Przem drzew 13 no.2:17-23 '52.

METRAK, C.

"Participation of the Central Laboratory of Wood-Using Industries in the yearly Furniture Show." p. 5. (PRZEMUSL DRZEWNY. Vol. 6, No. 1, Jan. 1955. Warszawa, Poland)

SO: Monthly List of East European Accessions. (EEAL). LC. Vol. 4, No. 4. April 1955. Uncl.

METRAK, C.

Principles of division of the carpentry in building, p. 15. (PRZEMYSŁ DRZEWNY, Warszawa, Vol. 6, no. 2, Feb. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 1, No. 1, Jan. 1955,
Uncl.

METRAK, C.

Some remarks on the Exhibition of the New Models of Furniture in Poznan. p. 138.

PRZEMYSŁ DRZEWNY. Centralne Zarządy Przemysłów: Drzewnego, Meblarskiego, i
Leśnego i Stowarzyszenie Inżynierów i Techników Leśnictwa i Drzewnictwa.
Warszawa, Poland. Vol 9, No. 5, May 1958.

Monthly List of East European Accession (EIAI), LC, Vol. 8, No. 9, Sept. 1959.

Uncl.

METRAK, C.

Some problems of the furniture industry in a long-term plan. p. 6.

PRZEMYSŁ DRZEWNY. Centralne Zarządy Przemysłów: Drzewnego, Meblarskiego, i
Lasnego i Stowarzyszenie Inżynierów i Techników Lesnictwa i Drzwnictwa.
Warszawa, Poland. No. 1, Jan. 1959

Monthly List of East European Accession (EEAI), LC, Vol. 8, No. 9, September, 1959.

Uncl.

METRAK, Czeslaw

Urea glue with a small content of free formaldehyde for the furniture industry. Przem drzew 13 no.1:13 Ja '62.

133-7-11/28

Granulation of Manganese Slags.

agglomerates of required composition can be obtained. The above method can be also used for granulation of metallic alloys as well as ferro-chromium slags and slags of non-ferrous metals. There are 2 tables, 3 figures and 5 Slavic references.

ASSOCIATION: Zestafoni Ferro-alloy Works (Zestafonskiy Zavod Ferrosplavov)

AVAILABLE: Library of Congress.

Card 2/2

MIKELADZE, G.Sh., kand.tekhn.nauk; NADIRADZE, Ye.M., kand.tekhn.nauk;
GOGORISHVILI, B.P., inzh.; TSKHVEDIANI, S.N., inzh.; CHIKASHUA,
D.S., inzh.; METREVELI, A.I., inzh.

Making ferrochromium in closed, electric ore reducing furnaces.
Biul. TSIICHM no.1:18-23 '61. (MIRA 14:9)
(Iron-chromium alloys—Electrometallurgy)

MIKELADZE, G.Sh.; NADIRADZE, Ye.M.; BEZARASHVILI, Sh.M.; DGEBUADZE, G.A.;
TSKHVEDIANI, R.N.; CHIKASHUA, D.S.; METREVELI, A.I.

Making ferrosilicon in a closed electric furnace. Stal' 21 no.5:
419-422 My '61. (MIRA 14:5)

1. Institut metallurgii AN GSSR i Zestafonskiy zavod ferrosplavov.
(Ferrosilicon—Electrometallurgy)

REZNICHENKO, V.A.; TKACHENKO, V.A.; MIKELADZE, G.Sh.; KARYAZIN, I.A.;
KOZLOV, V.M.; NADIRADZE, Ye.M.; SOLOV'YEV, V.I.; GOGORISHVILI,
B.P.; Primali uchastiye: PKHAKADZE, Sh.S.; METREVELI, A.I.;
CHIKASHUA, D.S.; KHROMOVA, N.V.; KAVETSKIY, G.D.; TSKHVEDIANI,
R.N.; ARABIDZE, T.V.

Making titanium slag in an electric closed reduction furnace.
Titan i ego splavy no.3:28-40 '62. (MIRA 16:1)
(Titanium--Electrometallurgy)

SOV/137-57-1-449

Translation from: Referativnyy zhurnal. Metallurgiya, 1957, Nr 1, p 59 (USSR)

AUTHORS: Chikashua, D. S., Metreveli, A. M.

TITLE: Search for a Rational Composition of the Charge of Raw Materials for the Aluminum-reduction Smelting of Manganese (Izyskaniye ratsional'nogo sostava shikhty dlya vyplavki metallichesкого margantsa alyumotermicheskim metodom)

PERIODICAL: Tr. In-ta metalla i gornogo dela. AN GruzSSR, 1956, pp 47-55

ABSTRACT: The optimum proportion of constituents for aluminum-reduction of Mn is as follows (by weight): Roasted Mn peroxide 1, granular Al 0.32, slaked lime 0.015, and CaF_2 0.023. To improve the quality of the Mn produced and to increase its recovery it is expedient to screen out the 1.25-mm undersize fraction, which is the most contaminated with Fe and SiO_2 and which constitutes ~ 5.8% of the total peroxide. When the process is carried out in V. A. Meladze type cast-iron smelting furnaces better results are achieved than in the conventional smelting furnaces lined with magnesite brick.

B. Z.

Card 1/1

LUK'YANOV, V.V.; ABINDER, A.A.; STAROVA, Ye.P.; METREVELI, A.S.

Investigating materials for the production of macaroni matrices.
Izv. vys. ucheb. zav.; pishch. tekhn. no. 2:85-89 '58. (MIRA 11:10)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti.
Kafedra tekhnologii metallov.

(Macaroni)

(Food industry--Equipment and supplies)

ANANIASHVILI, G.D.; BUDZKO, I.A.; BURGUCHEV, S.A.; VACHEYSHVILI, S.Ya.;
KURDIANI, I.S.; LISTOV, P.N.; METREVELI, B.I.; SAZONOV, N.A.;
SARKISYAN, A.M.; SHEKVATSABAYA, G.Ya.; MBID, L.Ye.

E.M.Rukhvadze. Mekh.i elek.sots.sel'khoz. 17 no.6:59 '59.
(MIRA 13:4)

(Rukhvadze, Egor Mikhailovich, 1914-1959)

METREVELI, G., inzhener-polkovnik

Rocket projectiles. Voenn. znan. 31 no. 7: 16-17 J1'55. (MIRA 8:12)
(Rockets (Ordnance))

METREVELI, G., inzhener-polkovnik.

Guided missiles. Voen.znan. 31 no.12:14-16 D '55. (MLRA 9:5)
(Guided missiles)

METREVELI, G., inzhener-polkovnik.

Self-propelled missiles. Voen.znan 31[1.e.32] no.5:14-15 My '56.
(Guided missiles) (MIRA 9:9)

MEYREVELI, G., inzhener-polkovnik.

Earth satellite. Voen. snan. 33 no.3:20-22 Mr '57.
(Artificial satellites)

(MIRA 10:6)

METREVELI, I. A.

USCIB/ Chemistry - Enamels

Card 1/1 Pub. 104 - 7/14

Authors : Avgustinik, A. I., Prof.; and Metreveli, I. A.

Title : Boronless and leadless enamels for majolica

Periodical : Stek. i ker. 11/3, page 19, Mar 1954

Abstract : An account is given of how in the making of the variety of pottery known as majolica poor results were obtained in the glazing due to the low percentage of Cambrian clay in the available soils. To overcome this obstacle a theoretical calculation was made of the ingredients required and when these were used the glazing proved to be of high quality. The quantities and kinds of ingredients are stated. Illustration. Table.

Institution:

Submitted:

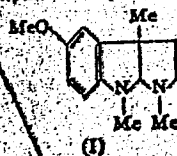
OKh MCHEDLIDZE, D.P.; METREVELI, I.A.

Stratigraphy of the Maeotic stage in western Guria. Trudy
VNIGNI no.38:214-220 '63. (MIRA 17:6)

METREVELI, L. I.
USSR!

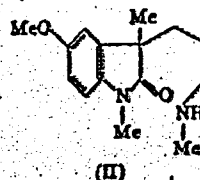
Synthetic studies in the indole series of derivatives. IV.
Synthesis of esermetol, homoesermetol, and homoeseroline.

M. N. Kolosov, L. I. Metrevelli, and N. A. Preobrazhenskii
(M. V. Lomonosov Inst. Fine Chem. Technol., Moscow).
Zhur. Obshch. Khim. 23, 2027-34 (1953); cf. *C.A.* 49, 1005c. — It was shown that *di*-esermetol is different in its properties from the substance previously described (King, et al., *C.A.* 26, 4056; 29, 168^a). Mixing 11.5 g. 1,3-dimethyl-3-(2-aminoethyl)-5-methoxyindolin-2-one with 5.3 g. BzHl gave spontaneous reaction; after 2 hrs. the mixt. was heated 15 min. on a steam bath and concd. *in vacuo*; the residue was heated with 9 g. MeI 1 hr., the process being repeated with 2 g. MeI, and the resulting mixt. concd. *in vacuo*, and the residual glassy methiodide treated with 60 ml. 90% EtOH and the alc. slowly distd. The remaining soln. was dild. with Et₂O, yielding 85% 1,3-dimethyl-3-(2-methylaminoethyl)-5-methoxyindolin-2-one-HI, m. 189-92° pure product, m. 198° (from EtOH); picrate, m. 178-9° (from EtOH). The HI salt (17 g.) in 600 ml. hot abs. BuOH was treated with 70 g. Na over 10-15 min. and a. er. usual treatment gave 81% esermetol (I), b_p 165-70° (pure, b_p 166.5°); HCl salt, m. 197-1°; HI salt, m. 167°; picrate, m. 160°.



The base with MeI gives an oily methiodide which heated with alc. picric acid yields orange picromethylate, m. 175-7°; I is unchanged (tested as picrate) on heating with

p-MeC₆H₄SO₂Cl in pyridine, or with MeOCOCI in aq. KOH-CHCl₃. To 2 g. I in Et₂O was added 2.5 g. MeI, and after 1 hr. few drops H₂O, the org. layer was sepd. and the residue taken up in 100 ml. 60% MeOH, heated 15 min. on a steam bath with fresh AgCl, filtered, evapd. *in vacuo*, the residue taken up in 10 ml. EtOH and treated with 5 g. K₂Fe(CN)₆ and 7 g. KOH in 60 ml. H₂O, heated 3 min. on a water bath, extd. with Et₂O, and the ext. concd. yielding after addn. of picric acid 1.3 g. dehydroesermetolmethine picrate, identical with 1,3-dimethyl-3-(2-dimethylaminoethyl)-5-methoxyindolin-2-one picrate, m. 170-1°. This shaken with concd. HCl, extd. with Et₂O and treated with NaOH gave a base, which with HCl gave 1,3-dimethyl-3-(2-dimethylaminoethyl)-5-methoxyindolin-2-one-HCl, m. 198-9°. Treatment of 39 g. 1,3-dimethyl-3-(γ-aminoethyl)-5-methoxyindolin-2-one with 17 g. BzHl in C₆H₆ gave after 1 hr. on a steam bath 96% 1,3-dimethyl-3-(γ-benzylaminopropyl)-5-methoxyindolin-2-one, m. 113.5-4.0° (from MeOH). This with 39 g. MeI heated 3 hrs. on a steam bath gave 68% 1,3-dimethyl-3-(γ-methylaminopropyl)-5-methoxyindolin-2-one II-HI, m. 166-6.5° (from EtOH); free base, b_p 198-200°;



picrate, m. 180-60.5° (from EtOH). This (10 g. or 14.4 g. HI salt) reduced as above with Na in BuOH to 70% homoesermetol (I, II-trimethyl-6-methoxyindolizol(1,3-b)indolizol), m. 68-9°, b_p 161-2°; HI salt, m. 145-7°; HBr salt, m. 150.5-60.5°; picrate, m. 146-7° (from EtOH). II (37.7 g.)

SELETSKIY, M.A.; METREVELI, L.I.; GUS'KOV, Ye.S.

Automatic machine for marking and packing ampules in boxes. Med.prom.
13 no.11:23-26 N '59. (MIRA 13:3)

1. Moskovskiy nauchno-issledovatel'skiy institut preparatov protiv
poliomyelita.
(PACKAGING) (DRUG INDUSTRY)

MITREVELI, L.I. (Moskva)

Portable electric bone saw. Arkh.pat. 21 no.7:74-75 '59.

(MIRA 13:5)

1. Iz eksperimental'no-tekhnicheskoy laboratorii Moskovskogo nauchno-issledovatel'skogo instituta preparatov protiv poliomiellita (dir. O.G. Andshapardze) Ministerstva sdravookhraneniya SSSR.

(BONES--SURGERY)
(AUTOPSY)

METREVELI, M. I., Cand Tech Sci -- (diss) "New Methods of Construction of Natural and Incident Shadows in Orthogonal Projections and in Perspective." Tbilisi, 1957. 15 pp with ^{diagrams} ~~graph~~
(Min of Higher Education USSR, Georgian Order of Labor Red Banner Polytechnic Inst im S. M. Kirov), 100 copies (KL, 47-57, 88)

33

METREVELI, N.

Contribution of Georgian innovators. Izobr.i rats. no.12:8 D
'59. (MIRA 13:8)

1. Predsedatel' Gruzinskogo respublikanskogo soveta Vsesoyuznogo
obshchestva izobretateley i ratsionalizatorov.
(Georgia--Technological innovations)

SOLOV'YEV, V.; BUYEVICH, N.; METREVELI, P.

Standardizing the expenditures of institutions financed through
the budget. Fin. SSSR 17 no.9:37-41 8 '56. (MLRA 9:10)

(Finance)

1. METREVELI, P. A.
2. USSR (600)
4. Colchis - Cottonwood
7. Planting of northern cottonwood in Colchis Les. Khoz. no. 1:37-38 Ja. '52.
9. Monthly List of Russian Accessions. Library of Congress, September 1952.
UNCLASSIFIED.

METREVELI, P.A.

USSR/Biology - Botany

Card 1/1 : Pub. 86 - 21/40

Authors : Metreveli, P. A., Cand. in Agri. Sci.

Title : The eastern spruce in the Caucasus

Periodical : Priroda 43/4, 100-102, Apr 1954

Abstract : The places are indicated where spruce forests exist in the Caucasus region, with explanations about the climatic conditions favorable to their growth. The fact is noted that spruce forests do not renew themselves after excessive cutting or fires and that they are propagated through the seeds. Illustrations; map.

Institution : Inst. Forestry, AS Ges. SSR

Submitted :

METREVELI, P.A.

Plant succession in spruce and fir plantations of Georgia as
influenced by the economic activity of man and local conditions.
Vest.Bot.sada.AN Gruz.SSR no.67:61-73 '61. (MIRA 15:7)
(Georgia—Forest ecology) (Spruce) (Fir)

DARAKHVELIDZE, Vakhtang Fedorovich; METREVELI, Petr Alekseyevich;
CHIKHLADZE, Levan Semenovich

[Principles of forestry] [Osnovy lesovodstva. Tbilisi,
Ganatileba] 1965. 363 p. [In Georgian] (MIRA 18:8)

METREVELI, P.G.

Let's retain the fundamentals of current biology curriculum while making its contents deeper. Biol. v shkole no.2:37-39 Mr-Apr '63.
(MIRA 16:4)

1. Tbilisskiy pedagogicheskiy institut.
(Biology—Study and teaching)

METREVELI, P.M.

Excursions to industry. Geog.v shkole no.1:47-49 Ja-F '54.

(ML3A 7:1)

(School excursions) (Geography, Economic--Study and teaching)

METREVELI, P.M.

~~Attachment for hanging maps. Geog. v shkole 20 no.6:56 H-D '57.~~
(MIRA 10:12)

1. Shkola No.370, Moskva.
(Maps)

METREVELI, Parmen Mikhaylovich.; YEROFYEV, I.A., red.; SMIRNOVA, M.I.,
tekhn. red.

[Study of industry and agriculture in the ninth-grade geography
course; practices of School No. 370 in Moscow] *Isuchanie*
promyshlennosti i sel'skogo khoziaistva v kurse geografii IX
klasse; iz opyta raboty shkoly No. 370 g. Moskvy. Moskva, Gos.
uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1958. 54 p. (MIRA 11:12)
(Geography--Study and teaching)

METREVELI, P.M.

Screen for daylight motion-picture projection. Geog. v shkole 24
no.2:58 Mr-Ap '61. (MIRA 14:3)

1. 370-y shkola Moskvy.
(Motion-picture screens)

METREVELI, P.M.; NAROZHNYI, G.A.

"Tables on the U.S.S.R. geography"; visual aid for the eight year and secondary schools by G.N.Iakovlev. Reviewed by P.M.Metreveli, G.A. Narozhnyi. Geog.v shkole 24 no.3:87-88 My-Je '61. (MIRA 14:5)
(Physical geography—Audio visual aids)
(Iakovlev, G.N.)

METREVELI, P.M.

Popularizing the materials of the 22nd Congress of CPSU in
class. Geog. v shkole 25 no.4:52-53 J1-Ag '62. (MIRA 15:3)

1. 381-ya shkola Moskvj.
(Efficiency, Industrial)

METREVELI, Roin

Strengthen the friendship. Za rul. 20 no.7:4 JI '62. (MIRA 15:7)

1. Sekretar' Tsentral'nogo komiteta Leninskogo kommunisticheskogo
soyusa molodezhi Gruzii, vneshtatnyy zamestitel' predsedatelya
Gruzinskogo respublikanskogo komiteta Dobrovol'nogo obshchestva
soдействия armii, aviatsii i flotu.
(Education, Military)

GRIGOR' YEV, V.P.; METREVELI, S.G.

Photoelectric method of area measurement. Bot. zhur. 43 no.6:828-830
Je '58. (MIRA 11:7)

1. Severoosetinskiy gosudarstvennyy pedagogicheskiy institut im.
K.L. Khetagurova, g. Ordzhonikidze.
(Photoelectric measurements) (Leaves)

L 41268-66 ENT(1)/ENT(m)/T/ENT(t)/ETI LJE(s) JD/AT

ACC NR: AP6023423

SOURCE CODE: UR/0139/66/000/003/0151/0154

AUTHOR: Metreveli, S. G.; Kundukhov, R. M.ORG: North Osetian gospedinstitut imeni K. L. Khetagurov (Severo-Osetinskiy gosped-institut)TITLE: Electron-hole flow in indium phosphideSOURCE: IVUZ. Fizika, no. 3, 1966, 151-154

TOPIC TAGS: pn junction, indium, forbidden zone width, electron mobility

ABSTRACT: A technique for producing pn junctions by diffusing zinc and cadmium in indium phosphide is described. Owing to its extreme forbidden zone width and high electron mobility, InP can be used in photoelectric converters of solar energy and in diode manufacture. Polycrystal and single crystal InP plates were used as initial material; pn junctions were obtained by the diffusion method. The plates were prepared from bars produced by gradient crystallization of the synthesized compound. At room temperature, the conductivity of the specimens was $60-200 \text{ ohm}^{-1} \text{ cm}^{-1}$, the electron concentration was $2 \cdot 10^{16} - 6 \cdot 10^{17} \text{ cm}^{-3}$, and the electron mobility was $3500-5000 \text{ cm}^2/\text{sec} \cdot \text{v}$. The diffusion of Cd and Zn--the acceptor admixture for InP--was carried out from the gaseous phase. The InP plates were ground, polished, rinsed and etched in $\text{HCl} + \text{HNO}_3$ mixture, combined with Cd, In and P, and placed into a 1 cm^3 quartz

Card 1/2

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ACC NR: AP6023423

2

ampoule. The ampoule was evacuated to $3-5 \cdot 10^{-5}$ mm Hg, and sealed off. The specimens were annealed at 730-850°C. The diffusion depth was measured by a metallographic microscope and checked by a thermal probe. Diodes with an inverse voltage of up to 30-60 v can be obtained from specimens annealed in Cd and Zn vapors; when Zn only is used as an admixture, the inverse voltage is 12-20 v; however, the return current in these specimens is smaller. Heating of the diodes to 150°C did not affect the volt-ampere characteristic. As a rule, the inverse critical voltage is considerable larger in purer specimens. The authors thank Professor D. N. Nasledov and V. V. Galavanov for proposing the topic and for constant interest in the work. Orig. art. has: 3 figures, 1 table. [14]

SUB CODE: 20/

SUBM DATE: 24Dec64/

OTH REF: 006 / ATD PRESS: 5157

Card 2/2 *LL*

USSR/Soil Science. Physical and Chemical Properties of Soil

J-3

Abs Jour : Ref Zhur - Biol., No 20, 1958, No 91406

Author : Metreveli T.G.

Inst : Institute of Soil Science, S.S. Georgian SSR

Title : Content of Active Manganese in Certain Soils of Georgia

Orig Pub : Tr. In-ta pochvoved. S.S. GruzSSR, 1956, 7, 243-254

Abstract : The content of active forms of Mn was investigated in chernozem, chestnut, brown forest, chestnut forest, alluvial podzolic and terra rossa soils of various districts of Georgia. The content of total Mn in the soils varies within the limits of 0.186 to 0.023 percent, of active Mn from 0.150 to 0.002 percent. The highest content (about 0.150 percent) of assimilable forms of Mn was detected in podzolic soils in the Ochamchirskiy rayon. It was demonstrated that the conversion of Mn to soluble forms occurs not only when acid reaction was present, but also in the neutral and alkaline medium as well. The terra rossa soils are distinguished by low content of Mn. The decrease of readily active Mn

Card : 1/2

METREVELI, T.I.

Study of the dynamic pressure of water on a vertical rigid wall in a triangular canyon. Soob. AN Gruz. SSR 39 no.3: 647-653 S '65. (MIRA 18:10)

L. Institut energetiki imeni Didbulidze AN GruzSSR. Submitted February 16, 1965.

METREVELI, V. I.

"From the History of Electrical Engineering" (Iz istorii elektrotekhniki) "Tekhnika
da Shroma," 1949, 71 pp.

METREVELI, V. I.

METREVELI, V. I. -- "Electric-Power Consumption of Machine and Tractor Stations in the Georgian SSR." Published by the Georgian Agricultural Inst. Min Higher Education USSR. Georgian Order of Labor Red Banner Agricultural Inst. Tbilisi, 1955. (Dissertation for the Degree of Candidate of Technical Sciences.)

SO: Knizhnaya letopis', No. 4, Moscow, 1956

TAVADZE, P.N., akademik; BAYRAMASHVILI, I.A.; METREVELI, V.Sh.

Internal friction peak of boron in pure iron. Dokl. Ak. Nauk. SSSR
46 no.2:401-406 N '65. (MIRA 1965)

1. Gruzinskiy institut metallurgii. 2. Akademiya nauk Gruzinskoy
SSR (for Tavadze). Submitted Jan. 1, 1965.

L 43955-66 EMP(e)/ENT(m)/EMP(w)/T/EMP(t)/ETI

ACC NR: AT6026905

SOURCE CODE: UR/0000/66/000/000/0036/0036

AUTHOR: Tavadze, F. N. (Academician AN GruzSSR); Bayramashvili, I. A.;
Metreveli, V. Sh.; Tsagareyshvili, G. V.

ORG: none

TITLE: Internal friction in boron

SOURCE: AN SSSR. Institut metallurgii. Vnutrenneye treinye v metallakh i splavakh
(Internal friction in metals and alloys). Moscow, Izd-vo Nauka, 1966, 36

TOPIC TAGS: boron whisker, whisker internal friction, whisker shear modulus,
temperature dependence

ABSTRACT: The temperature dependence of the internal friction and shear modulus of
monocrystalline boron whiskers about 0.7 mm in diameter and up to 110 mm long has been

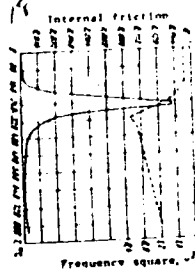


Fig. 1. Temperature dependence of the
internal friction (solid line) and shear
modulus (broken line) in boron.

Card 1/2

L 43955-66

ACC NR: AT6026905

investigated at temperatures ranging from room temperature to 850C. The obtained results showed that internal friction shows a peak at about 260C (see Fig. 1). The shear modulus (represented by frequency square ν^2 , to which it is proportional) drops as the temperature increases. Starting at 160C, it descends sharply, which coincides with a rapid rise in internal friction. The nature of the internal-friction peak in boron could not be determined at this stage of investigation and requires further study. Orig. art. has: 1 figure. [TD]

SUB CODE: 11. ~~001~~ SUBM DATE: 02Apr66/ ATD PRESS: 5060

Card 2/2 blg

L 07806-67 EXT(m)/EWP(t)/ETI IJP(c) JD
ACC NR. AR6017483 SOURCE CODE: UR/0137/66/000/001/V021/V022

AUTHOR: Tavadze, F. N.; Bayramashvili, I. A.; Sakvarelidze, L. G.; Metreveli, V. Sh.

TITLE: Zone refining of iron 22

SOURCE: Ref. zh. Metallurgiya, Abs. 1V158 5

REF SOURCE: Tr. Gruz. in-t metallurgii, v. 14, 1965, 123-127

TOPIC TAGS: zone refining, carbonyl iron, metal purification

ABSTRACT: Data are given from experiments on zone refining of two iron ingots: the first of Armco iron and the second of carbonyl iron. The first specimen was purified in an argon atmosphere on a copper hearth at a rate of 4 cm/hr. The second was purified at the same rate in a helium atmosphere on a lime hearth. It was found that zone refining may be done successfully on a hearth made from a mixture of calcium and magnesium oxides (5% MgO). Frank-Read sources at all stages of development were observed in the iron. Horizontal zone refining produces perfect crystals of iron including perfect single crystals. Purification results after nine passes on both specimens were as follows (the numerator indicates % in the initial material, the denominator — % after zone refining in the head of the ingot): first specimen Si 0.17/0.002, P 0.007/0.003, S 0.028/0.007, C 0.017/0.009, Mn 0.13/0.025, Cu 0.16/0.09. Second specimen Si 0.0001/none, Mn 0.00005/None, Ni 0.02/0.007, C 0.011/0.006. 10 illustrations, 2 tables, bibliography of 5 titles. A. Pokhvisnev. [Translation of abstract]

SUB CODE: 11, 13

Card 1/1 mc

UDC: 660.181.4-492

METREVELI, V. V.

METREVELI, V. V.: "The problem of the surgical anatomy of the superior mesenteric artery and vein." Georgian State Publishing House for Medical Literature. Tbilisi State Medical Inst. Tbilisi, 1956. (Dissertation For the Degree of Candidate in Medical Sciences.)

Knizhnaya letopis', No. 39, 1956. Moscow.

USSR / Human and Animal Morphology, Normal and Patho- S-4
logic -- Cardiovascular System

Abs Jour: Ref Zhur-Biol, No 13, 1956, 59066

Author : Metreveli, V. V.

Inst : Tbilisi Medical Institute

Title : The Surgical Anatomy of the Large Trunks of the
Mesenteric Artery and Vein

Orig Pub: Tr. Kafedry operativn. khirurgii i topogr. Anato-
mii, Tbilissk. med. in-t, 1956, 1, 145-162

Abstract: The superior mesenteric artery (SMA) and the super-
rior mesenteric vein (SMV) can have either a cen-
tral or a scattered type of ramification. The
main trunk of the SMA usually has the magistral
type of ramification; the main trunk of the SMV,

Card 1/3

USSR/ Human and Animal Morphology, Normal and Patho- 3-4
logic -- Cardiovascular System

Abs Jour: Ref Zhur-Biol., No 13, 1955, 59566

the mixed type. The ramification of the branches is often different in type from that of the main trunk. The main trunks of the SMV and SMA have the same type of ramification in 67.5 percent of the cases, while this is true of the intestinal arteries and veins in 42.6 percent of the cases. The main trunks of the SMA and SMV are parallel in only 2.9 percent of the cases, while their syntopy changes 3-4 times in 50 percent of the cases. The syntopy of the branches of the SMA and SMV changes 2-3 times in 90 percent of the cases. The termination point of the main SMA trunk in children is located 50.3 percent of the time at the level of the ileocecal angle, or, sometimes 1.5 centimeters

Card 2/3

USSR/Human and Animal Morphology - Normal and Pathological.
Circulatory System.

S

Abs Jour : Ref Zhur Biol., No 11, 1958, 50275

Author : Metreveli, V.V.

Inst : Tbilisi Medical Institute

Title : Anastomoses of Blood Vessels of the Mesentery of the
Small Intestine

Orig Pub : Tr. Kafedry operativn. khirurgii i topogr. anatomii
Tbilissk. med. in-t, 1956, 1, 163-180

Abstract : Intestinal arteries and veins, in forming anastomoses
between one another, create ansae. Arterial ansae were
found in children in 35.2 percent of cases and in adults
in 46 percent of cases; ansae of veins were found in
51.3% of cases in 90 percent of cases, intestinal arte-
ries and veins deprived of ansae were met with in the

Card 1/2

- 15 -

USSR/Human and Animal Morphology - Normal and Pathological.
Circulatory System.

S

Abs Jour : Ref Zhur Biol., No 11, 1958, 50275

terminal sector of the ileum. Larger intestinal arteries and veins usually form more numerous anastomoses than smaller vessels. The number of straight vessels originating in an anastomosis and nourishing the intestinal wall fluctuates in children from 2 to 138, and in adults from 2 to 175, for each intestinal artery; the number of analogous vessels for intestinal veins fluctuates from 2 to 158. Rudimentary anastomoses in the specimens of the superior mesenteric artery of children found to fluctuate between four and 45, those of adults between two and 80, while in the specimens of the superior mesenteric vein of adults their number fluctuates between 11 and 106. An anastomotic connection between the superior mesenteric artery (vein) and the ileocolic artery (vein) has been found in all the specimens.

Card 2/2

METREVELI, V.V. (Tbilisi 1, Kurgannaya 16-b)

Unusual case of hepatic anomaly in a newborn. Arkh.anat.gist.
1 embr. 33 no.3:68 J1-S '56. (MIRA 12:11)

1. Iz kafedry obshchey khirurgii (zav. - zasl.deyat. nauki prof.
D.G.Ioseliani) i iz kafedry topograf. anatomii i operativnoy
khirurgii (zav. -NN Demetradze [deceased], Tbilisskogo med.
instituta.

(LIVER, abnormalities,
intrahepatic canal with intestinal loop (Rus))
(INTESTINES, abnormalities,
same)

MITREVELI, V. V., Cand Med Sci -- (diss) "On the Problem of
Surgical ~~Anatomy~~ of the Upper Mesenteric Artery and Vein."
Tbilisi, Gruzmedgiz, 1957. 19 pp (Tbilisi State Med Inst),
200 copies (KL, 49-57, 115)

- 68 -

GABASHVILI, Timote; METREVELI, Ye.P.

[Travels] Puteshestviia. Tbilisi, Akad.nauk Gruzinskoi SSR,
1956. 158 p. (MIRA 12:10)
(Voyages and travels)

AUTHORS: Kurdyumov, A. V., Metrik, A. A. SOV/163-58-1-13/53

TITLE: A New Method for Producing Copper-Cadmium Alloys of High Cadmium Content (Novyy sposob polucheniya ligatury med'-kadmia s vysokim soderzhaniyem kadmiya)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958. Nr 1, pp 62-65 (USSR)

ABSTRACT: By means of a new method copper-cadmium alloys were produced which have only a minimum loss of cadmium. This method is based on the simultaneous solution of cadmium in molten cadmium and the diffusion of liquid cadmium and gaseous cadmium into the solid copper phase. This is carried out at temperatures of 650-700°. At these temperatures the reaction takes 1,5 to 3 hours. This method makes possible to produce copper alloys with 15-18 % cadmium. The alloys produced in this way have a uniform structure. The alloys of copper-cadmium containing 50-70 % cadmium may also be produced by the diffusion of gaseous cadmium in solid copper. The microstructural analyses of the samples proved that the alloys formed have higher cadmium contents.

Card 1/2 In the reaction between copper and gaseous cadmium a chemical

SOV/163-58-1-13/53

A New Method for Producing Copper-Cadmium Alloys of High Cadmium Content

compound is formed which has a melting point lower than 700°.

By this method alloys are produced which contain 2 % cadmium and are called "cadmium bronzes".

This new method for the production of copper-cadmium of higher cadmium content is recommended for the technical production of alloys. There are 4 figures and 1 reference, 1 of which is Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota
(Moscow Institute of Non-Ferrous Metals and Gold)

SUBMITTED: October 1, 1957

Card 2/2

MEMORANDUM
METRIK, B.A., inzhener; MAKEYEV, P.V., inzhener; DUBROVSKIY, I.Ya.

Efficient scheme for supplying steam to plants of the
rubber industry. *Proz.energ.* 12 no.9:15-17 S '57. (MIRA 10:10)
(Steam engineering)

ALATYRTSEVA, I.N.; KRIMKER, R.I.; METRIK, G.L.

New dyes for leather. Kozh.-obuv.prom. 3 no.11:26-28 II '61.
(MIRA 15:1)

(Dyes and dyeing--Leather)

ALATYRTSEVA, I.N.; METRIK, G.L.; STRELKOVA, L.V.

Determining the exhaustion properties of dyes. Kozh. obuv. prom. 6
no.6:19-23 Je '64. (MIRA 17:9)

METRIKIN, H. A.										1949									
W.E.										Aerials and Transmission Lines									
Investigation of the Voltages on Insulators in the Guy Wires of Tower Aerials. A. A. Metrikin, Radiotekhnika Moscow, Nov-Dec 1949, Vol. 4, No. 6, pp. 1340-1342. In Russian.										1340									
Juni '50										METALLURGICAL LITERATURE CLASSIFICATION									
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GROUP 3										GROUP 4									
GROUP 5										GROUP 6									
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Jul 53

METRIKIN, A. [A]

USSR/Electronics - Communications
Radio Relay Lines
Antennas

"Antennas for Radio Relay Communications Lines," A. Metrikin, Moscow

Radio, No 7, pp 12-15

Covers the following topics: parabolic antennas (paraboloid of revolution or parabolic cylinder), horn and lens antennas, interference let transmitting and receiving antennas, and antenna feeder systems. Covers dielectric, metal plate, and metal-dielectric lenses in some detail. Includes photograph of a convex lens formed from conducting disks.

263T69

SOV/106-58-6 5/13

AUTHORS: Paramonov, V.K., Metrikin, A.A. and Fel'd, N.A.

TITLE: The Measurement of Small Reflection Coefficients in a Wide Frequency Band with the Aid of a T-bridge (Izmereniye malykh koeffitsiyentov otrazheniya v shirokoy diapazone chastot s pomoshch'yu T-mosta)

PERIODICAL: 'Elektrosvyaz', 1958, Nr 5, 23 - 31 (USSR)

ABSTRACT: The equipment is intended for the measurement of small reflection coefficients (less than 1 - 1.5%) in the frequency band 3400 - 3900 Mc/s. The arrangement is shown in Figure 1 and consists essentially of a hybrid-T. The co-linear arms are connected to an adjustable termination and to the element under test backed by a standard termination, respectively. The E-arm is fed from the source; the output from the H-arm may be selected at one position of a 2-way switch before detection. The other position of the switch samples the output from a directional coupler connected to the source. The output from the switch goes to a detector via an attenuator and then to an amplifier and indicator. The detector consists of a cartridge-type crystal mount with a probe extending into the guide. The crystal return path is a thin length of wire whose inductance in conjunction with the probe capacitance tunes to the mean

Card 1/3

SOV/100-68-5-5/13

The Measurement of Small Reflection Coefficients in a Wide Frequency Band with the Aid of a T-bridge

operating frequency. The crystal is a DKI-1 with an effective resistance of 300 Ω . The matching over the band is no worse than 0.5. Figure 2 shows the variation in $s_{w.r.}$ over the band at the E-, H- and test-arms. The H-arm matching is provided by a tapered rod mounted eccentrically on a rotating arm. The E-arm matching requires both a peg and a diaphragm. Figure 4 shows a drawing of the adjustable termination the absorbing part of which is made of two thin wedges of laminated insulation material coated with asphalt, mounted in the central lane of the guide parallel to the E-vector. At their "dead" end, the wedges are secured to a movable short-circuit which also supports a thin rod which moves axially between the wedges. The rod protrudes at the sharp ends of the wedges and is T-shaped at the end. Independent adjustment of wedges and rod enable the reflection coefficient of the combination to be varied. Figure 5 shows the standard termination. This is a thin wedge of the same absorbing material used above, supported in the centre of the guide between two tapering blocks of foamed plastic. The reflection

Card 2/3

SOV/100-18-5/13

The Measurement of Small Reflection Coefficients in a Wide Frequency Band with the Aid of a T-bridge

measurement is conventional; the necessary additions are described in detail. Seven sources of error are identified and their probable values tabulated. The total estimated error in measurement varies from 0.005% with a reflection coefficient of 0.1% to 0.275% with an r.c. of 1.5%. There are 7 figures, 1 table and 1 Soviet reference.

SUBMITTED: July 13, 1957

Card 3/3

SV 111-50-11-776

AUTHORS: Vetrikhin, A.A., Chief Designer; Saranov, V.V., Institute of Technical Sciences

TITLE: Parabolic Horn Antenna for Radio Communication Relay Lines with "Vesna" Equipment (Ruporno-parabolicheskaya antenna dlya radioreleynnykh liniy svyazi na apparature "Vesna")

PERIODICAL: Vestnik svyazi, 1958, Nr 11, pp 4-6 (1958)

ABSTRACT: The article contains basic construction data and electrical characteristics of a parabolic horn antenna, developed by the Scientific Research Institute of the USSR Ministry of Communications, for radio communication relay lines using the "Vesna" equipment. The antenna has the following dimensions: height 620 cm, width 390 cm, depth 120 cm; area of opening 7.5 sq m; antenna volume 11 cu m; weight 990 kg; weight with rotating device 1,370 kg. The opening of the antenna is covered by plastic sheets (penoplast, in one version (Figure 1a). However, a honeycomb type cover made of glass cloth is more effective. The "penoplast" cover reduces the output only to a negligible extent, while the glass wool cover reduces the output by 0.7 db compared with an uncovered

Car 1/2

007/111-88-11-7/36

Parabolic Horn Antenna for Radio Communication Relay Lines with "Vesna"
Equipment

antenna. The dehydrator "AD-1" is used to produce an excess of dry air at a low pressure inside of the antenna. Figures 3 and 4 are diagrams of the directivity in the horizontal and vertical planes. Further, the authors present sets of formulas for calculating the various electrical characteristics. There are 2 photos and 5 graphs.

ASSOCIATION: VNI Ministerstva svyazi SSSR (Scientific Research Institute of the USSR Ministry of Communications)

Card 2/2

Metrikin, A.A.

В. М. Косов
Эффективность и конструктивность антенны
сложной излучающей системы

В. М. Косов
Полноточивость антенны по схеме Шен

В. М. Косов
Э. СЕЛЕНА АНТЕННЫ ПСТРОИТЬ
Руководитель А. Р. Косов

В. М. Косов
(с 10 до 16 часов)

В. М. Косов
Вопросы проектирования антенны для
телевизионной и УКВ антенны

В. М. Косов
В. А. Косов
Детальное проектирование антенны для
телевизионной антенны в транс-
форме

В. М. Косов
Антенна для антенны с антенной антенны
или антенны антенны

В. М. Косов
Детальное проектирование антенны антенны антенны

В. М. Косов
Исследования антенны антенны антенны для
телевизионной антенны

В. М. Косов
(с 18 до 22 часов)

В. М. Косов
В. М. Косов
В. М. Косов

В. М. Косов
К антенне с антенной антенны антенны
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В. М. Косов
Детальное проектирование антенны антенны
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В. М. Косов
Вопросы проектирования антенны антенны
антенны

report submitted for the Confidential Meeting of the Scientific Technological Society of
Radio Engineering and Electrical Communications in A. S. Popov (VSEI), Moscow,
8-12 June. 1957

9(1)

AUTHOR:

SOV/111-9-10-5/20
Metrikin, A.A., Chief Designer. Paramonov, V.K., Candidate of Technical Sciences

TITLE:

Waveguide Systems for Radio-Relay Lines Using the "Vesna" Apparatus

PERIODICAL:

Vestnik svyazi, 1959, Nr 10, pp 8-10 (USSR)

ABSTRACT:

This article presents electrical characteristics and construction data for the elements of the waveguide system for radio-relay lines using the "Vesna" apparatus. Opening with a brief discussion of waveguide design and construction, the author states that the article will consider rectangular waveguides in use on several radio-relay lines under construction. Choice of waveguide dimensions, assuring the absence of higher order waves and a sufficiently low attenuation of energy in the waveguide, is discussed; the operating range in this particular case is 7.7 to 8.8 cm, and future expansion of this range at the upper end is taken into account; thus dimensions of 58 and 25 mm are selected for the walls of the waveguide. In dealing with the materials for waveguide construction

Card 1/5

SOV/111-59-10-5/23

Waveguide Systems for Radio-relay Lines Using the "Vesna" Apparatus

the authors state that pure copper is best, but too soft; brass, containing 96% pure copper, has sufficiently high conductivity and, experiments show, sufficient rigidity. Construction of waveguides out of aluminum, containing a very low percentage (1 - 2%) of impurities is also mentioned. It is noted that industrially produced aluminum waveguides are anodized by the chromic acid method and have good anti-corrosion characteristics, while brass waveguides are produced without a protective covering; protective measures for the latter are very briefly discussed. The author states that this article considers rectangular (58 x 25 mm) waveguides manufactured from L-96 brass, containing 96% pure copper, and that information on rectangular (58 x 25 mm) waveguides of aluminum, in which the content of admixtures of magnesium and manganese does not exceed 1%, is presented. Flange joints, and their requirements, in the waveguide system of the "Vesna" apparatus, for both internal and external installation, are treated: flanges for internal use are stamped from 5-millimeter brass, and brazed to

Card 2/5

SOV/111-59-10-5/23

Waveguide Systems for Radio-relay Lines Using the "Vesna" Apparatus

the waveguide using POS-40 solder. Requirements for flanges used in external installations, determined by conditions such as temperature deformation and icing, demanding additional load carrying capability, are also discussed; such flanges are cast from brass and brazed to the waveguide with POS 40 solder; a rubber gasket provides the necessary hermetic seal. Such flanges, states the author, can, under test, withstand loads of about 7-8 tons. Both types of flanges are illustrated (Fig 1). Two types of curved waveguide are described- bent and turned (Fig 2); in order to keep the reflection coefficient from the curve in the former to a minimum the radius of curvature is taken equal to no less than 0.5 m, and the angle of rotation no more than 90°. Twisted waveguides and their construction are briefly dealt with. the angle of twist is kept under 10-15° to minimize reflection of energy in such waveguides. Flexible waveguide inserts, their construction and use, are also treated; the reflection coefficient it is stated, does not exceed 3-4% in flexible waveguide inserts. Two types

Card 3/5

SOV/111 59 10-5 '27

Waveguide Systems for Radio-relay Lines Using the "Veana" Apparatus

of hermeticizing inserts are described a lower such insert, for separation of the hermeticized antenna-waveguide system from the rest of the apparatus, and an upper such insert (Fig 4) to guarantee stable operation of the antenna-waveguide system when antenna hermetization is disrupted, the latter is equipped with an electric heater and insulated cover to avoid freezing in winter, one heating element consumes 70-100 watts. Measurements of attenuation over the frequency range of 3300-4300 mc in a rectangular brass waveguide (58 x 25 mm) 100 m long were made, and the experimentally obtained values compared to those computed by formula (given), experimental and computed values sufficiently coincided for the most part (Fig 5). Measurement of attenuation in an aluminum waveguide (A-00 alloy) showed that it is 0.5 db greater, on the average, than the attenuation in a similar brass waveguide. Matching of long waveguides was studied experimentally on an experimental waveguide 70 m long as well as on standard waveguide systems of various lengths produced for one of the radio-relay lines; all matching mea-

Card 4/5

SOV 111 59 10 5 123

Waveguide Systems for Radio-relay Lines Using the "Vespa" Apparatus

Measurements were made with a waveguide measuring line, and the end of the waveguide being studied coupled to a well matched load. Repeated measurements showed that in sections of waveguide systems 10-100 m long with a well matched load, the travelling wave coefficient over the operating frequency range has a value on the order of 0.95-0.98. The results of one such measurement are illustrated (Fig 6). A waveguide T bridge, specially constructed for measurement of small reflection coefficients over a wide frequency range, was used to measure the degree of matching between separate elements of the waveguide system. Studied were reflection coefficients from one waveguide joint, of waveguide curves (bent and turned) of twisted waveguides and hermetically sealed inserts. Measurements showed that in the operating frequency range the reflection coefficient from one joint does not exceed 0.2-0.3%. Measurement of the iterative attenuation between waveguides showed it to be no lower than 120 db in the operating frequency range. In conclusion the authors note that on the basis of the data presented these systems satisfy all the necessary requirements.

Card 5/5

METRIKIN, A.A.; TARASOV, N.S.

Wave guides with circular cross section designed for
operation as radio relay lines. Radiotekhnika 15 no.7:
10-15 J1 '60. (MIRA 13:7)

1. Deystvitel'nyy chlen nauchno-tekhnicheskogo Obshchestva
radiotekhniki i elektrosvyazi im. A.S.Popova (for Metrikin).
(Wave guides)
(Radio relay lines)

METRIKIN, A. A.

ACCESSION NR: AF3001133

S/0106/63/000/006/0010/0015

AUTHOR: Metrikin, A. A.

TITLE: Horn parabolic antenna with reradiator

SOURCE: Elektrosvyaz', no. 6, 1963, 10-15

TOPIC TAGS: modified horn-parabolic antenna, reradiator, radiation pattern, two radio relay bands

ABSTRACT: An application of a reradiator consisting of a solid metal surface and the installation of a horn at a certain angle with respect to the reradiator permits the simplification of the general structure of the antenna and eliminates the need for careful hermetic sealing. The modified antenna consists of a parabolic reflector, a reradiator, and a horn (See Fig. 1 of Enclosure). Point $F_{sub 2}$ is a mirror reflection of focal point $F_{sub 1}$ of the parabola in regard to reradiator R. An exciting waveguide is connected to the horn at point $F_{sub 2}$. Under such excitation, the phase and amplitude

Card 1/3

ACCESSION NR: APJ001133

distribution of the field in the antenna aperture is similar to the case of the antenna excitation at point F sub 1. The gain (40 db) and the radiation patterns with horizontal and vertical polarization of the field were almost identical with those of common horn-parabolic antennas. The traveling-wave ratio at the input of the antenna with vertical and horizontal polarization of the field varied between 0.86 and 0.97. By replacing the solid metal reradiator with a selective surface consisting of dipoles, the antenna can be used for two radio-relay bands simultaneously -- 3400--3900 Mc and 1600--3000 Mc. Modification permits the reduction of the vertical dimensions of the antenna by 20%. "The author expresses thanks to V. V. Timofeyev, V. V. Gusev, and N. L. Makainova for assistance in the work." Orig. art. has: 14 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 06Dec62

DATE ACQ: 01Jul63

ENCL: 01

SUB CODE: 00

NO REF SOV: 007

OTHER: 000

Card 2/3

ACCESSION NR: AP3001133

ENCLOSURE: 01

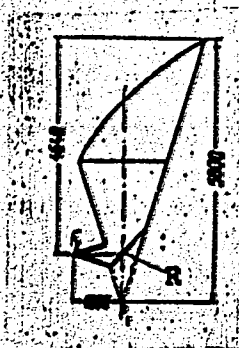


Fig. 1. Modified horn-parabolic antenna

Card 3/3

METRIKIN, A.A.

Parabolic-horn antenna with a preradiator. Elektrosviaz' 17
no.6:10-15 Je '63. (MIRA 16:7)

(Microwaves) (Wave guides) (Antennas (Electronics))

ACC NR: AP/005129

SOURCE CODE: UR/0131/06/001/012/3467/3473

AUTHOR: Vas'kin, V. V.; Metrikin, V. S.; Uskov, V. A.; Chirobokov, M. Ya.

ORG: Gor'kiy State University im. N. I. Lobachevskiy (Gor'kovskiy gosudarstvennyy universitet)

TITLE: Influence of internal electric field on simultaneous diffusion of impurities in semiconductors

SOURCE: Fizika tverdogo tela, v. 3, no. 12, 1966, 3467-3473

TOPIC TAGS: semiconductor impurity, physical diffusion, hf transistor, germanium semiconductor, crystal effect

ABSTRACT: In view of the importance of simultaneous diffusion of two components of semiconductors to the manufacture of high-frequency transistors and similar devices, the authors investigate theoretically the influence of the internal electric field on simultaneous diffusion of donors and acceptors in an intrinsic semiconductor. The mathematical analysis yields a set of formulas and theoretical curves for the distribution of the donor concentration in a diffusion layer. The theoretical results were compared with experimental data obtained for the simultaneous diffusion, at 795C, of indium and antimony in germanium, using In^{114} and Sb^{124} as radioactive tracers. The distribution of the donors and acceptors was determined by successive removal of layers. The results have shown that the donors have little influence on the diffusion of acceptors, but the effect of acceptors on the diffusion of donors is

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appreciable. This is due to differences in the diffusion coefficients of the two substances. The deceleration of the donors increases the increasing acceptor concentration. For the same surface concentration of the acceptors, the influence of the acceptors on the donor diffusion is greater when the donor concentration is low. Some discrepancies between the theoretical and experimental data were observed, and these are attributed to formation of defects. Orig. art. has: 3 figures, 16 formulas, and 1 table.

SUB CODE: 20/
09/ SUBM DATE: 07Feb66/ ORIG REF: 006/ OTH REF: 005

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METRIKINA, R.M.

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100 AND 4TH COLUMNS
117 AND 120 COLUMNS
PROCESSES AND PROPERTIES MODE
10

The structure of aniline black. I. The reaction of nigraniline with aniline. I. S. Joffe and R. M. METRIKINA. *J. Russ. Phys.-Chem. Soc.* 62, 1101-14 (1930).—Nigraniline (I), in the form of a paste with H_2O , was treated with salts of the NH_2 salts of sulfamic, metanilic (II), and 1,3,6- $C_6H_3(NH_2)(SO_3H)_3$ acids. The resulting insol. material was insol. in alkalis and contained no S. More vigorous treatment of I with NH_4OH soln., boiling for 3 hrs., adding 3% H_2O_2 , then more II, mixing for 3 hrs. in the cold, and finally boiling again for 3 hrs., gave identical results. With II in $AcOH$ soln., I gave with the vigorous treatment above some insol. material was 30% less than the reprecipitated by acids, but contg. no S. The wt. of the insol. material was 30% less than the dry I taken. The absence of S in the product precludes the possibility of a condensation of I and II. It is probably an oxidation product of I, since an identical product was formed, accompanied by the decrease in wt. when II was omitted. When II was used, titration of the wash liquid from the insol. product indicated the theoretical amt. of NH_2 for the II taken. Aniline-HCl (III) gives an insol. product with CrO_3 . With the simultaneous action of CrO_3 on mixts. of I and III, a change in wt. of insol. product occurs, the amt. which depends upon the ratio of CrO_3 , I and III taken. Increase in amt. of CrO_3 and III causes an increase in the wt. of insol. product, while increased amt. of I causes a decrease. It is probable that the observed change in wt. is the algebraic sum of the actions of CrO_3 upon I and III separately. II. The interaction of nigraniline and aniline. Ibid. 1115-22.—Nigraniline (I) oxidizes aniline-HCl (II) to emeraldine (III) and is itself simultaneously reduced to III, producing an increase in wt. of insol. material. CrO_3 or H_2O_2 oxidizes III to I with a small decrease in wt., but the superficial effect is still an increase above the wt. of I originally taken. The newly formed I then oxidizes some more II; and thus by repeated treatments an increase in wt. of insol. products occurs according to a geometric progression and without limit, given only a sufficient no. of successive operations. Such an unlimited increase is impossible if Green's (cf. C. A. 7, 4072) formula for aniline black as a condensation product of I with 3 mole II is admitted. J and M. find that the processes do not go ideally as calculated due to oxidation of

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part of the I to sol. products by CrO_3 , the amt. of such oxidation depending upon the relative amt. of oxidant used and the state of dispersion of I. Nevertheless when the above cycle of operations is repeated a large no. of times a const. increase in insol. material results. Therefore Green's conception of a definite oxidative condensation of I with 3 mols. II must be abandoned.

Lewis W. BUTS

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"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001033720006-9

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